

Appl. No. 09/828,660

DRAFT/FOR DISCUSSION PURPOSES ONLY (to Final Action of July 30, 2003)

REMARKS/ARGUMENTS

Claims 38-44, 48-54 and 59-67 are pending following entry of the above amendments. Claims 41, 42 and 64 are allowed. Claims 45-47 and 55-58 have been canceled. New claims 65-67 have been added. No new matter has been added.

Claims 38, 39 and 43-44, 48-54 and 59-63 stand rejected as anticipated by U.S. Pat. No. 5,876,160 to Johnson. Each of these claims requires a cutting edge having first and second ends (or root and tip ends) and having a *controlled hone* formed thereon. Each of these claims further requires that the controlled hone is varied.

Each of claims 38, 39 and 43-44, 48-54 and 59-63, as amended, further requires that at least a substantial portion of the controlled hone defines a surface that *is continuously curved in cross section*.

The Examiner has taken the position that the faceted lands formed on the cutting insert of Johnson are comparable to the claimed cutting edge having a controlled hone formed thereon. The Examiner asserts at page 11 of the final action that "[a] land can be interpreted as a hone." The Examiner further asserts that the faceted lands of Johnson change in slope and length and that such changes are comparable to varying hone shape and dimension, respectively.

The faceted lands defined by Johnson, however, do not define surfaces that are continuously curved in cross section as required by each of claims 38, 39, 43-44, 48-54 and 59-63. Johnson, therefore, fails to show the elements required by each of these claims. For at least this reason, Johnson fails to anticipate any of claims 38, 39, 43-44, 48-54 and 59-63.

Furthermore, there is no suggestion of in Johnson of forming a honed surface having a portion that is continuously curved in cross section in the claimed manner. The teaching in Johnson of faceted surfaces teaches away from curved surfaces. The necessary teaching of a honed edge defining a surface continuously curved in cross section, lacking in Johnson, could only be supplied by improper hindsight use of applicant's disclosure.

Applicants respectfully request that the rejection of claims 38, 39, 43-44, 48-54 and 59-63 as anticipated by Johnson be withdrawn.

Claim 40 is rejected as obvious based on Johnson. Claim 40 depends from claim 38 and, therefore, requires a cutting edge having a controlled hone defining a surface that

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is continuously curved in cross section. As discussed above, the cutting edge of Johnson has faceted lands formed thereon and, therefore, fails to disclose or suggest forming a honed surface having a portion that is continuously curved in cross section as required by claim 40. For at least this reason, the invention of claim 40 is not obvious from Johnson and the applicant respectfully requests that the rejection of claim 40 be withdrawn.

New claims 65-67 have been added. The limitations of these claims are similar to those of allowed claims 41, 42 and 64, respectively, except that the term "shape" has been replaced with the term "dimension".

The present application is believed to be in condition for allowance, which is hereby requested.

Respectfully submitted,

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 38, 39, and 43-63 are rejected under 35 U.S.C. 102(a) as being anticipated by Johnson (5,876,160).

Referring to claim 38, Johnson discloses the claimed invention comprising, as shown in Fig. 5, a tool (52, see Fig. 5) comprising a cutting edge (60, see Fig. 5) that extends from a tip end (closer to the portion 62, see Fig. 8A) to a root end (see Fig. 8B-2, note the middle depth of the tool (52) is interpreted as the root end), the cutting edge having a controlled hone (64, see Fig. 8B-2), formed on it which has a shape at the tip end different from the shape at the root end.

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As to claim 39, Johnson also discloses: the hone shape varies continuously along the cutting edge (60, see Fig. 5) from the tip end to the root end.

As to claim 43, Johnson also discloses: a tool (52, see Fig. 5) comprising a cutting edge (60, see Fig. 5) that extends from a first end (closer to the portion 62, see Fig. 8A) to a second end (see Fig. 5, note the middle depth of the tool (52) is interpreted as the second end) and has an intermediate portion between the first and second ends, the cutting edge (60, see Fig. 5) having a controlled hone (64, see Fig. 8B-2) formed on it that has a shape and dimensions variable along the intermediate portion of the cutting edge from the first end to the second end. Note as shown in Figs. 5, 8A, and 8B-2, the controlled hone (64, see Fig. 8B-2) changes shape, such as the slope of the hone, and dimensions, such as the length of the hone, from the first end (closer to the portion 62, see Fig. 8A) to the second end (see Fig. 5, note the middle depth of the tool (52) is interpreted as the second end).

As to claim 44, Johnson also discloses: the shape (such as the slope of the hone 64 as set forth) varies continuously from the first end to the second end.

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As to claim 45, Johnson also discloses: the dimensions (such as the length of the hone 64 as set forth) vary continuously from the first end to the second end.

As to claim 46, Johnson also discloses: both the shape and dimensions (such as the slope and the length of the hone 64 as set forth) vary from the first end to the second end.

As to claim 47, Johnson also discloses: both the shape and dimensions (such as the slope and the length of the hone 64 as set forth) vary continuously from the first end to the second end (see Fig. 5, the slope and the length of the hone 64 vary continuously from the first end to the second end).

As to claim 48, Johnson also discloses: the shape at the first end is different from the shape at the second end (as set forth above).

As to claim 49, Johnson also discloses: the shape at the first end (closer to the lower end 62, see Fig. 5) is the same as the shape at the second end (closer to the upper end 62, see Fig. 5), and the shape along the intermediate portion (see Fig. 5, note the middle depth portion of the tool (52) is interpreted as the intermediate portion) is different from the shape at the first and second ends.

As to claim 50, Johnson also discloses: a cutting edge that extends from a first end (closer to the lower end 62, see Fig.

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5) to a second end (closer to the upper end 62, see Fig. 5), and has an intermediate portion (see Fig. 5, note the middle depth portion of the tool (52) is interpreted as the intermediate portion) between the first end and the second end, the cutting edge having a controlled hone (64, see Fig. 8B-2) formed on it, the hone (64, see Fig. 8B-2) having a first shape and first dimensions at the first end, a second shape and second dimensions at the second end, and an intermediate shape and intermediate dimensions along the intermediate portion (see Fig. 5, the slope and the length of the hone 64 vary continuously from the first end to the second end as set forth above)

As to claim 51, Johnson also discloses: the first shape (64, see Fig. 8A) and the second shape (64, see Fig. 8A) are substantially the same.

As to claim 52, Johnson also discloses: the first shape (64, see Fig. 8A) and the second shape (64, see Fig. 8A) are substantially the same and the intermediate shape (64, see Fig. 8B-2) is variable between the first end and the second end.

As to claim 53, Johnson also discloses: the intermediate shape (64, see Fig. 8B-2) varies continuously from the first end to the second end (see Fig. 5).

AS to claim 54, Johnson also discloses: the first shape (64, see Fig. 8A), the second shape (64, see Fig. 8A), and the

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intermediate shape (64, see Fig. 8B-1) are all substantially the same. Note at this embodiment, the hone shape is horizontal flat.

As to claim 55, Johnson also discloses: a tool comprising a cutting edge that extends from a first end (closer to the lower end 62, see Fig. 5) to a second end (closer to the lower end 62, see Fig. 5) and has an intermediate portion (see Fig. 5, note the middle depth portion of the tool (52, see Fig. 5) is interpreted as the intermediate portion) between the first end and the second end, the cutting edge having a controlled hone formed on it, the hone having a first shape and first dimensions at the first end, a second shape and second dimensions at the second end, and an intermediate shape and intermediate dimensions along the intermediate portion, at least one of the intermediate shape and intermediate dimensions varying continuously between the first end and the second end (see Fig. 5, the slope and the length of the hone 64 vary continuously from the first end to the second end as set forth above).

As to claim 56, Johnson also discloses: the first shape (see 64 in Fig. 8A) and second shape (see 64 in Fig. 8A) are substantially the same.

As to claim 57, Johnson also discloses: the first shape (see 64 in Fig. 8A) is different from the second shape (see

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64 in Fig. 8B-2, not at this embodiment, the middle depth portion of the tool (52) is interpreted as the second end).

As to claim 58, Johnson also discloses: a tool (52, see Fig. 5) comprising a cutting edge (60, see Fig. 5) that extends from a first end to a second end and has an intermediate portion (note the middle depth portion of the tool 52 is interpreted as the intermediate portion, se Fig. 5) between the first end and the second end, the cutting edge having a controlled hone (64, see Fig. 8B-2) formed on it, the hone having a shape (such as the slope of the hone 64, see Fig. 5) and dimensions (such as the length of the hone 64, see Fig. 5) which vary continuously along the intermediate portion from the first end to the second end (see Fig. 5, the slope and the length of the hone 64 vary continuously from the first end to the second end as set forth above).

As to claim 59, Johnson also discloses: a high precision cutting tool (52, see Fig. 5) comprising a plurality of cutting edges (60, 60, 60, see Fig. 5, including the lower edge closer to 62, intermediate edge 60, and the upper edge 60 closer to 62, see Fig. 5) formed on a portion of the tool, each cutting edge having a controlled hone (64, see Fig. 8B-2) formed on it; the magnitude of the hone on one edge (see Fig. 8A) being different than the magnitude of the hone on at least one other edge (see Fig. 8B-2).

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As to claim 60, Johnson also discloses: the magnitude of the hones on adjacent edges are different edge (see the hones 64 in Fig. 8A and Fig. 8B-2).

As to claim 61, Johnson also discloses: the magnitude (the length) of the hone on an edge varies along at least a portion of the edge (60, see Fig. 5).

As to claim 62, Johnson also discloses: the shape (the slope shape of hone 64, see Fig. 8B-2) of the hone (64) is non-symmetrical on at least one edge (note the hone shape 64 is broadly interpreted as being non-symmetrical with respect to a reference such as a line along 60, see Figs. 5 and 8B-2).

As to claim 63, Johnson also discloses: the shape (the slope shape of hone 64, see Fig. 8B-2) of the hone on one edge (see Fig. 8A) is different from the shape of the hone on at least one other edge (see Fig. 8B-2).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

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said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (5,876,160).

Johnson discloses the claimed invention except for: the tool being a threading tool and wherein the cutting edge is a thread forming edge.

However, using a cutting insert, such as Johnson's tool 52, in a threading tool in order to facilitate removable installation of the cutting tool is well known in the art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Johnson's tool to be a threading tool and wherein the cutting edge is a thread forming edge since it is just an alternate use of the Johnson's tool.

Allowable Subject Matter

5. Claims 41, 42, and 64 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter: Johnson (5,876,160) is the closest reference. However, Johnson'160 does not teach or fairly suggest: the steps of: translating the tool along a path substantially parallel to the axis of rotation of the abrasive

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brush such that said other portion of the cutting edge passes through at least a portion of the volume of the abrasive brush to form a hone on the cutting edge having a second shape different from the first shape (claims 41 and 64); and repositioning the cutting edge while translating the tool through the abrasive bristles such that a second portion of the cutting edge is substantially parallel to the axis of rotation of the abrasive brush, the repositioning causing a hone having a shape different from the first shape to be formed on the second portion of the cutting edge being honed (claim 42).

Response to Amendment

7. Applicant's arguments filed 5/6/03 have been fully considered but they are not deemed to be persuasive.

Regarding the 35 U.S.C. §112, first and second paragraph problems, the specification and drawing's objections, Applicant's response has overcome these objections and rejections.

Applicants argue that Examiner has taken the position that the land (64) of Johnson'160 is a "hone" and that land (64) of Johnson'160 includes a "hone shape [that] varies continuously

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along the cutting edge. Both of the above-mentioned assertions regarding Johnson 160 are erroneous (page 6, lines 13-16).

Applicants also argue that a "land" is distinct from a "edge hone". As shown in Figure 8B-2 of Johnson 160, a land formed at the junction of two non-parallel surfaces creates a faceted surface having sharp edges at each of opposite sides of the faceted surface where the land intersects the original surfaces (page 6, lines 17-20). Examiner disagrees with Applicants. As set forth in the art rejections above, as shown in Figs. 5, 8A, and 8B-2, the controlled hone (64, see Fig. 8B-2) changes shape, such as the slope of the hone, and dimensions, such as the length of the hone, from the first end (closer to the portion 62, see Fig. 8A) to the second end (see Fig. 5, note the middle depth of the tool (52) is interpreted as the second end). A honed land is popularly used in the art. A land can be interpreted as a hone.

Applicants further argue that "in contrast, an edge hone (as shown in Figures 3B and 3C of the present application) is not a faceted surface having sharp edges. Instead, a hone provides an even or smooth transition between adjacent surfaces without any sharp edges." (page 6, lines 20-22). Examiner disagrees with Applicants. The "hone provides an even or smooth transition

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between adjacent surfaces without any sharp edges" is not described and claimed as the limitations of the Applicant's invention.

Applicants further argue that "the land (64) of Johnson'160 does not have a "hone shape" that varies along the cutting edge. As discussed above, the land (64) of Johnson'160 is a faceted surface rather than a shaped surface. Johnson discloses that the "width" of the faceted surface varies along its length being at a minimum at its opposite ends and a maximum at an intermediate point. Such dimensional variation (i.e., the changing width), however, is not a shape change. The land is still a land, only narrower at one end. As described in the present application and illustrated in the figures, a honed edge,, on the other hand, can be varied in its shape" (page 6, last paragraph). Examiner disagrees with Applicants. Johnson'160's hone 64 has a shape which is a slope as shown in Fig. 8B-2 and Johnson'160's hone 64 has a dimension which is a length thereof. Both the shape and dimension, as shown in Fig. 5, vary from the first end (closer to the portion 62, see Fig. 8A) to the second end (see Fig. 5, note the middle depth of the tool (52) is interpreted as the second end) as set forth.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Henry Tsai whose telephone number is (703) 308-7600. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner supervisor, Eddie Chan, can be reached on (703) 305-9712. Any inquiry of a general nature or relating to the

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status of this application or proceeding should be directed to the TC 2100 receptionist whose telephone number is (703) 305-3900.

10. In order to reduce pendency and avoid potential delays, Group 2100 is encouraging FAXing of responses to Office actions directly into the Group at fax number:

Official faxes: 703-746-7239; and

After Final faxes: 703-746-7238.

This practice may be used for filing papers not requiring a fee. It may also be used for filing papers which require a fee by applicants who authorize charges to a PTO deposit account. Please identify the examiner and art unit at the top of your cover sheet. Papers submitted via FAX into Group 2100 will be promptly forward to the examiner.

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